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EXAMINER

HESS, DANIEL A

ART UNIT	PAPER NUMBER
2876	

DATE MAILED: 06/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/663,832

Applicant(s)

SMITH, MALCOLM G.

Examiner

Daniel A Hess

Art Unit

2876

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other:

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, in claim 1, line 7 the data storage device is said to include the substrate. In claim 7, lines 2 and 3, the substrate is said to include the storage device. The only way this could be true is if the substrate and data storage device were one and the same, but this is not the intended meaning.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 24 is rejected under 35 U.S.C. 102(b) as being anticipated by Opheij (US 4,868,373).

Opheij teaches data storage means having all of the elements and means of method claim

24. For example, Opheij teaches the following:

There is (column 4, line 67) disc-shaped optical memory. The card of Opheij rotates relative to the reading means to facilitate scanning (column 2, lines 10-20). The storage is card-shaped (figure 3), and this card has substrates, namely plastics (column 4, line 60). There is data transfer between the card and a data-processing unit (column 1, lines 10-20). Opheij has (column 5, line 4) a circular hole in the card. The hole is in the card's center (figure 1a). The card is rotated about this hole (column 6, lines 20-40). A transducer must be present to convert the optical signal into an electrical signal for use with any computing system.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-14, 18-20 and 25-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Opheij (US 4,868,373) as in view of Ahlert (US 5,227,212).

Re claim 1: Opheij teaches data storage means: There is (column 4, line 67) disc-shaped optical memory. The card of Opheij rotates relative to the reading means to facilitate scanning (column 2, lines 10-20). The storage is card-shaped (figure 3), and this card has substrates, namely plastics (column 4, line 60). There is data transfer between the card and a data-processing unit (column 1, lines 10-20).

Opheij differs in that his data storage system is not magnetic, but rather optical.

Art Unit: 2876

Ahlert shows (column 1, lines 13-15) a magnetic recording disk. As can be seen in figures 7 and 8, the recorded portion is circular and is designed to rotate. This is further discussed in the text (column 5, lines 1-10).

In view of Ahlert's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known magnetic recording means as taught by Ahlert into the teachings of Opheij because magnetic recording is more easily rewritable.

Re claim 2: It is understood that magnetic material, in order to facilitate storage of data, must have some predetermined field orientation. It is in this orientation that individual bits are distinguished. The magnetic material must be relatively thin in order to fit on the surface of a substrate and have relatively high density in order to record data in a way that is easily readable.

Re claims 3 and 4: Opheij shows (figure 2) a card; there are thus two sides. Data storage is shown on one of those two sides. Which side is obverse or converse is simply a matter of the viewer's perspective.

Re claims 5 and 7: Opheij has (column 5, line 4) a circular hole in the card. The hole is in the card's center (figure 1a). The card is rotated about this hole (column 6, lines 20-40).

Re claim 6: Opheij shows (figures 1a, 3) that the card, including the plastic substrate, are essentially rectangular. The overall data storage device, namely the card, is rectangular.

Re claim 8: It is clear in Opheij (figures 1a and 3) that the substrate is essentially rectangular and the data storage portion is essentially circular.

Re claim 9: Examination of Opheij (figure 1b; column 5, line 54 to column 6, line 12) reveals that the data storage is mounted within the substrate.

Art Unit: 2876

Re claim 10: The relative rotation of data storage device with respect to the station has already been established in Opheij re claim 1 above (column 2, lines 10-20).

Re claim 11: Opheij fails to explicitly show the presence of a transducer.

Ahlert shows (column 4, line 61) that a transducer is present in the reader.

In view of Ahlert's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known transducer in the reader device into the teachings of Opheij because it is desirable to convert a magnetic signal into an electrical signal for computer processing.

Re claims 12 and 13: Opheij fails to show an inductive, thin film read-write head.

Ahlert shows (column 2, lines 49-50) the use of a thin-film inductive read-write head as the transducer.

In view of Ahlert's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known inductive, thin film read-write head as taught by Ahlert into the teachings of Opheij because induction is permits reading and instantaneous conversion to electricity of magnetic data without direct contact to the surface.

Re claim 14: Opheij fails to show sputtering of a magnetic coat.

Ahlert shows (column 2, lines 59-65) the sue of sputtering to form a magnetic coating.

In view of Ahlert's teachings, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known sputtering of a magnetic coat as taught by Ahlert into the teachings of Opheij because this helps to achieve an even coating.

Art Unit: 2876

Re claim 18: Opheij teaches data storage means: There is (column 4, line 67) disc-shaped optical memory. The card of Opheij rotates relative to the reading means to facilitate scanning (column 2, lines 10-20). The storage is card-shaped (figure 3), and this card has substrates, namely plastics (column 4, line 60). There is data transfer between the card and a data-processing unit (column 1, lines 10-20). Opheij is well aware, further of magnetic storage on such cards (column 1, lines 34-35).

Opheij differs in that his data storage system is not magnetic, but rather optical. Opheij also fails to explicitly show the presence of a transducer.

Ahlert shows (column 1, lines 13-15) a magnetic recording disk. As can be seen in figures 7 and 8, the recorded portion is circular and is designed to rotate. This is further discussed in the text (column 5, lines 1-10). Ahlert shows (column 4, line 61) that a transducer is present in the reader.

In view of Ahlert's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known magnetic recording means as taught by Ahlert into the teachings of Opheij because magnetic recording is more easily rewritable. In view of Ahlert's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known transducer in the reader device into the teachings of Opheij because it is desirable to convert a magnetic signal into an electrical signal for computer processing.

Re claims 19 and 20: Opheij fails to show an inductive, thin film read-write head.

Ahlert shows (column 2, lines 49-50) the use of a thin-film inductive read-write head as the transducer.

Art Unit: 2876

In view of Ahlert's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known inductive, thin film read-write head as taught by Ahlert into the teachings of Opheij because induction is permits reading and instantaneous conversion to electricity of magnetic data without direct contact to the surface.

Re claims 25 and 29: It is understood that magnetic material, in order to facilitate storage of data, must have some predetermined field orientation. It is in this orientation that individual bits are distinguished. The magnetic material must be relatively thin in order to fit on the surface of a substrate and have relatively high density in order to record data in a way that is easily readable.

Re claim 26: Opheij fails to show a moving transducer.

Ahlert shows (figure 8; column 5, lines 1-10) that a head with a transducer pivots about 14 to move the read head 20 on the recording surface.

In view of Ahlert's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known moving transducer as taught by Ahlert into the teachings of Opheij because this enables reading of multiple circular tracks on a magnetic surface with an inductive head.

Re claims 27 and 28: Opheij fails to show an inductive, thin film read-write head.

Ahlert shows (column 2, lines 49-50) the use of a thin-film inductive read-write head as the transducer.

In view of Ahlert's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known inductive, thin film read-



Art Unit: 2876

write head as taught by Ahlert into the teachings of Opheij because induction is permits reading and instantaneous conversion to electricity of magnetic data without direct contact to the surface.

Re claim 30: Opheij teaches data storage means: There is (column 4, line 67) disc-shaped optical memory. The card of Opheij rotates relative to the reading means to facilitate scanning (column 2, lines 10-20). The storage is card-shaped (figure 3), and this card has substrates, namely plastics (column 4, line 60). There is data transfer between the card and a data-processing unit (column 1, lines 10-20).

Opheij differs in that his data storage system is not magnetic, but rather optical.

Ahlert shows (column 1, lines 13-15) a magnetic recording disk. As can be seen in figures 7 and 8, the recorded portion is circular and is designed to rotate. This is further discussed in the text (column 5, lines 1-10).

In view of Ahlert's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known magnetic recording means as taught by Ahlert into the teachings of Opheij because magnetic recording is more easily rewritable.

Re claim 31: It is understood that magnetic material, in order to facilitate storage of data, must have some predetermined field orientation. It is in this orientation that individual bits are distinguished.

Re claim 32: Opheij teaches data storage means: There is (column 4, line 67) disc-shaped optical memory. The card of Opheij rotates relative to the reading means to facilitate scanning (column 2, lines 10-20). The storage is card-shaped (figure 3), and this card has

Art Unit: 2876

substrates, namely plastics (column 4, line 60). There is data transfer between the card and a data-processing unit (column 1, lines 10-20).

Opheij differs in that his data storage system is not magnetic, but rather optical.

Ahlert shows (column 1, lines 13-15) a magnetic recording disk. As can be seen in figures 7 and 8, the recorded portion is circular and is designed to rotate. This is further discussed in the text (column 5, lines 1-10).

In view of Ahlert's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known magnetic recording means as taught by Ahlert into the teachings of Opheij because magnetic recording is more easily rewritable.

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Opheij as modified by Ahlert as applied to claim 1 above, in further view of Meeks (US 6,268,909).

Opheij as modified by Ahlert fails to show plating of the magnetic disk material.

Meeks shows (column 1, lines 43-50) plating in the magnetic disk material.

In view of Meeks' teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known plating in magnetic disk material because plating generally has been found to lead to desirable properties for magnetic substrates.

8. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Opheij as modified by Ahlert as applied to claim 1 above, in further view of Hall (US 6,378,037).

Art Unit: 2876

Opheij as modified by Ahlert fails to show explicitly use of oxide in the magnetic layer.

Hall shows (column 1, lines 40-45) the use of metal oxide in hard disks.

In view of Hall's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known metal oxide on the surface of a data medium as taught by Hall into the teachings of Opheij as modified by Ahlert because metal oxide can be magnetized to represent data.

9. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Opheij as modified by Ahlert as applied to claim 1 above, in further view of Foley et al (US 4,518,627).

Opheij as modified by Ahlert fails to show web coating of magnetic material onto the surface of the recordable medium.

Foley shows (column 3, lines 15-35; abstract, line 3) the process of web coating to create a magnetic surface.

In view of Foley's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known web coating as taught by Foley into the teachings of Opheij as modified by Ahlert because this produces a durable, magnetically re-writable medium.

10. Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Opheij in view of Ahlert and Ionesca (US 6,301,068).

Re claim 21: Opheij teaches data storage means: There is (column 4, line 67) disc-shaped optical memory. The card of Opheij rotates relative to the reading means to facilitate

Art Unit: 2876

scanning (column 2, lines 10-20). The storage is card-shaped (figure 3), and this card has substrates, namely plastics (column 4, line 60). There is data transfer between the card and a data-processing unit (column 1, lines 10-20). Opheij is well aware, further of magnetic storage on such cards (column 1, lines 34-35). As the figures show, the card has two sides, one of which has a recorded portion.

Opheij differs in that his data storage system is not magnetic, but rather optical. Opheij also fails to explicitly show the presence of a transducer.

Ahlert shows (column 1, lines 13-15) a magnetic recording disk. As can be seen in figures 7 and 8, the recorded portion is circular and is designed to rotate. This is further discussed in the text (column 5, lines 1-10). Ahlert shows (column 4, line 61) that a transducer is present in the reader.

In view of Ahlert's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known magnetic recording means as taught by Ahlert into the teachings of Opheij because magnetic recording is more easily rewritable. In view of Ahlert's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known transducer in the reader device into the teachings of Opheij because it is desirable to convert a magnetic signal into an electrical signal for computer processing.

Opheij further fails to show the presence of two transducers, one for reading and another for writing.

Art Unit: 2876

Ionescu shows (column 9, line 30 to column 10, line 35) the presence of first and second transducers. Further, each head can (column 4, lines 15-20) both write to and read from the magnetic surface.

In view of Ionescu's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known two transducers as taught by Ionescu, because having two heads permits faster access by avoiding cases where reads must wait for writes to finish and vice, versa.

Re claims 22 and 23: Opheij fails to show an inductive, thin film read-write head.

Ahlert shows (column 2, lines 49-50) the use of a thin-film inductive read-write head as the transducer.

In view of Ahlert's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known inductive, thin film read-write head as taught by Ahlert into the teachings of Opheij because induction is permits reading and instantaneous conversion to electricity of magnetic data without direct contact to the surface.

11. Claims 33-36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Opheij in view of Ahlert and Carnegie et al. (US 6,196,047).

Re claims 33 and 34: Opheij teaches data storage means: There is (column 4, line 67) disc-shaped optical memory. The card of Opheij rotates relative to the reading means to facilitate scanning (column 2, lines 10-20). The storage is card-shaped (figure 3), and this card has substrates, namely plastics (column 4, line 60). There is data transfer between the card and a data-processing unit (column 1, lines 10-20).

Art Unit: 2876

Opheij differs in that his data storage system is not magnetic, but rather optical. Opheij also fails to show a stepper motor for positioning a transducer located in a data processing station relative to a rotating portable card.

Ahlert shows (column 1, lines 13-15) a magnetic recording disk. As can be seen in figures 7 and 8, the recorded portion is circular and is designed to rotate. This is further discussed in the text (column 5, lines 1-10).

Carnegie shows (column 4, lines 10-20) a stepper motor for moving across a disc surface.

In view of Ahlert's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known magnetic recording means as taught by Ahlert into the teachings of Opheij because magnetic recording is more easily rewritable.

In view of Carnegie's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known stepper motor for moving across the disc surface as taught by Carnegie into the teachings of Opheij because it can be desirable to move in discrete amounts across the disc surface in order to move between tracks.

Re claim 35: Opheij shows (figures 1a, 3) that the card, including the plastic substrate, are essentially rectangular. The overall data storage device, namely the card, is rectangular.

Re claim 36: Opheij has (column 5, line 4) a circular hole in the card. The hole is in the card's center (figure 1a). The card is rotated about this hole (column 6, lines 20-40).

Art Unit: 2876


***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Liu et al. (US 6,311,893) shows another card with circular tracks. Hargis (US 3,864,755) shows a floppy disc and cover. Ghose (US 5,172,282) shows a hard drive.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel A Hess whose telephone number is (703) 305-3841. The examiner can normally be reached on 8:00 AM - 5:00 PM M-F.

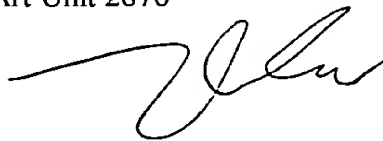
14. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G Lee can be reached on (703) 305-3503. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

15. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



DH  
June 5, 2002

Daniel A Hess  
Examiner  
Art Unit 2876



THIEN M. LE  
PRIMARY EXAMINER